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Deviation of a Jet at a T junction at low Reynolds number PASCAL PANIZZA, WILFRIED ENGL, LOF/CNRS, KOUSKE OHATA, LOF, ANNIE COLIN, LOF/CNRS — We study the hydrodynamic behaviour of a laminar jet flowing through a channel when it reaches a junction. We observe the existence of two possible flow regimes, namely the splitting and deviation of a jet in the most simple microfluidic configuration, namely a T junction. The transition between the two regimes is not monitored by the shape of the T junction nor by capillary effects, but can be easily anticipated in terms of the hydrodynamic properties of the flow. We present a simple hydrodynamic model which is in very good agreement with observed experimental jet behaviour. The transition between both regime acts as a flow or viscosity comparator. We show how this effect can be used for the design of digital and integrated microfluidic devices

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